



Aging and Health Technology Watch

## Music to their ears: using music and technology to enhance dementia care

Music is intricately entwined into the tapestry of our lives and memories, starting at birth and continuing throughout our life. We use it to celebrate milestones, big and small. It comes to our aid during moments of strife, pain, and frustration. Music connects us to people, cultures, emotions, and beliefs. It acts as a bridge to our memories. We listen to music to reduce stress, celebrate happy moments, motivate ourselves, learn new concepts, and express emotions. With so many genres, formats, and styles, music has the power to calm, inspire, soothe, energize, and heal. And nowhere is the impact of music more apparent than in senior living, where music can be used to transform and transport residents.

## Impact of music on dementia care

The research included in this paper illustrates music's effectiveness in enhancing the care of those living with dementia by helping them activate memories, reduce agitation, and improve motor function, as shown in an NIH 2021 Systematic Review.<sup>1</sup> It should come as no surprise that music can act as a key to reminiscing and unlocking memories. Consider the "Music Bridges to Memory" program offered by Chicago's Institute for Therapy Through the Arts, in which ITA partners with memory-care facilities in the Midwest and virtually to teach caregivers and family members of people living with dementia how music-based techniques can be used to stimulate memory and language.<sup>2</sup> Their goal of bridging the gap between people with dementia and their families and caregivers through music-based approaches highlights the significant impact that music has been shown to have in bringing joy and connection back into their lives. Here are some of the many ways using music can help improve the day-to-day lives of people living with dementia and those who care for them.



### **Music helps mitigate Behavioral and Psychological Symptoms of Dementia (BPSD).**

Research has shown that music can help mitigate or prevent many symptoms associated with BPSD. Because musical memory is generally retained longer than other memories, music can facilitate reminiscence and potentially reduce anxiety through general mind activation and specific memory triggers.<sup>3</sup> Music may also reduce the stress that contributes to BPSD by creating a sense of familiarity and regularity in the environment, something that staff at Western Home Communities found to be true with their residents: "Along with staff and volunteer guidance and support, we can redirect residents experiencing troubling BPSD by engaging them with a game, favorite TV show, calming sounds, music, or spiritual content to meet each person's unique needs and interests and/or to re-awaken past skills."<sup>4</sup>

**Music for residents in senior living can reduce the need for medication.** Although long critiqued, the use of medication to control agitation in dementia care continues—including phony diagnoses to enable prescribing anti-psychotic drugs like Haldol in nursing homes.<sup>5</sup> Yet multiple studies prove that music is an effective alternative to managing agitation among dementia care residents: in a large study of 4,107 residents in 250 California nursing homes, music reduced the use of antipsychotic medications by 13% and anti-anxiety medications by 17% for each of the quarters of the study. In addition, the number of days on medication were reduced by 30%, and aggressive behaviors were reduced by 20%.<sup>6</sup>

**Music can reduce agitation and mitigate pain.** Music has been shown in studies to reduce agitation in nursing homes (the primary reason for medication).<sup>7</sup> Despite those studies and many years of negative publicity, an HHS study published in 2022 showed that antipsychotic prescribing overall increased during the early months of the Covid-19 pandemic through June of 2021, the end date of the HHS review.<sup>8</sup> Music has also been shown to have a therapeutic effect on pain. According to one study, pain relief may be due to the release of endorphins or because patients are distracted by memories brought up by the music. Listening to music can also lead to a perceived improvement in quality of life, which could lessen chronic pain.<sup>9</sup>

**Music also has a therapeutic physical effect on Parkinson's patients**, 25% of whom live in senior living communities. Music has been known to help ease symptoms of this disease. An NIH 2021 Systematic Review of 58 different papers showed a positive impact of music therapy for individuals with Parkinson's disease. This included improvements in the "motor component, which can be addressed through listening, body rhythm, and rhythmic auditory stimulation."<sup>10</sup> Additionally, many studies found that music can decrease pain levels.<sup>11</sup> Other papers discussed improvements in communication, swallowing, breathing, and the emotional aspect through programs that focus on singing, either individually or in groups.<sup>12</sup> For those living with Parkinson's disease, music has acted as an intervention tool to support them with expressing emotions. For example, studies also indicate that music therapy increases motivation, self-confidence, and mood regulation and offers emotional expression and support for those living with the disease. This research supports how music can help boost moods and decrease agitation.

## Using music in dementia care settings

**Music has a therapeutic effect on individuals with dementia.** How do we know? Research has shown that incorporating music into daily dementia therapy or programming impacts adults living with dementia in many ways. Adult day programs for people with dementia use music as one of the key participatory activities for the day.<sup>13</sup> In 2020, a meta-analysis reviewed eight studies that indicated the positive benefits of music for people with dementia and other issues with procedural memory.<sup>14</sup> In one example, a musician named Clive with memory loss found his procedural memory was invoked and he was able to read and play music when presented with piano sheet music by Bach that he had once played.<sup>15</sup>

**Activities Directors who use music purposefully find multiple benefits.** For staff who understand the power of music, incorporating it into their programming in a purposeful way leads to better outcomes for their residents and caregivers. Lost memories have been rekindled, confirmed by activities directors in senior living who offer multiple examples of programs and results. Music is often played by activities directors in dementia care settings at specific times of the day, such as the sundowning period in the late afternoon. One community has even found a way to start every day with music:



*At 7 a.m., we start off with a daily meditation on the tablet. The tablet has different meditations that you can access under the Relax button. You can actually start off with relaxing music and it will continue playing and then you start the meditation. Fabulous. Next, we go into Music at 8:30 a.m. This works well with a resident population that does not get distracted by music in the background. For individuals living with progressive dementia, we try to decrease that stimulation when we're dining because it can get distracting. But if it doesn't bother them, then we start music with breakfast. And it's wonderful.*

**Olivia Mogab**

Quality Improvement Specialist at Vivage Senior Living

# 5

## Ways to immediately start using music in your community

### Boost energy and engagement during meals and physical therapy.

Play music or turn on a music video to motivate residents during physical therapy.



### Start a choir.

Singing improves seniors' overall well-being by boosting confidence levels, creating opportunities to socialize, decreasing stress, and promoting purposeful engagement.<sup>16</sup>



### Use music as prompts to encourage writing, improvisation, or other artistic disciplines.

Play Mussorgsky's Pictures at an Exhibition and have residents paint what they believe each song depicts.



### Add music to your games to help exercise memory.

- Fill in the lyrics using songs from the past.
- Create a fun musical play on BINGO. Print out BINGO sheets with song titles on each square, then play samples of music and have residents guess the song by placing a chip on the BINGO sheet.



### Use music to celebrate and highlight your residents' cultures.

- Learn about different instruments from different cultures using videos and pictures online.
- Learn a song/dance from different cultures.
- Prepare food and listen to music that coincides with the culture being studied.





## iN2L: A powerful intervention tool for all levels of care

iN2L content has been used in nursing homes and senior living settings throughout the U.S. since 1999. According to the company, “iN2L includes an extensive music therapy program designed by music therapists, relaxation videos, and ambient sound applications, as well as easy ways to connect residents with content aligned with their interests.” As many community leaders have learned through using iN2L’s music content for residents of all physical and cognitive abilities, even the simplest of use cases can generate powerful moments among residents and staff.

These use cases include enabling and supporting such music-driven community initiatives as those in Brightview Senior Living,<sup>17</sup> Aegis Living,<sup>18</sup> or Sonata Senior Living.<sup>19</sup> And then there is the example of Brookdale Senior Living, as described by Juliet Holt Klinger, Brookdale’s Senior Director of Dementia Care:



*We had a gentleman who moved into a community in Michigan, not happy, having a rough adjustment, wanting to leave. They had iN2L pulled up at one point and they played the University of Michigan Fight Song for marching. We noticed that he started drumming with his hand. There is a drumming program in the system; he was given a reacher tool and began drumming onto the touch screen. This was soothing him. He became engaged and forgot that he wanted to go home. His daughter choked up; she had forgotten that when she was young, he would play on his drum set for 30 minutes and get rid of his stress for the day. This was deep in their memory—for both of them.”*

**Juliet Holt Klinger**

Senior Director of Dementia Care at Brookdale Senior Living

Holt Klinger also observed: “When you have a kinesthetic movement—dance, drums or similar, maracas, providing a non-pharmacological intervention as well as pleasure and joy—there is something about the music that engages people at a high level and tugs at their emotional memory center. You can redirect people towards more positive activities.”

**Coro Health**, an industry leader in therapeutic music and spiritual offerings, defines the MusicFirst philosophy as an approach that utilizes “music first” before (or in place of) more traditional forms of intervention. An iN2L + LifeLoop partner, Coro Health has frequently demonstrated the impact of music in the care of older adults with dementia. According to the company, they offer “proven, outcome-based, digital therapeutic collections of music, created and tested by music therapists.” They have also published research on the relationship between music and the brain, highlighting the benefits of music for individuals with dementia, and outlining best practices in detail.<sup>20</sup> iN2L systems also host Coro Health’s MusicFirst program.

**Bridges by EPOCH**, an 11-community memory care network with residences throughout New England, partnered with iN2L and Eversound to enhance their community outreach program, which provided individuals living with dementia along with their caregivers, family, and friends, the opportunity to meet and socialize with others in similar situations. Bridges by EPOCH's Memory Café hosted sessions using Eversound's wireless listening system presented via the iN2L touch screen engagement system with 12–15 participants.<sup>21</sup>

**At Trinity Community at Fairborn, a United Church Homes Community**, Activities Director Karen LeBlanc said residents at the community in Fairborn, Ohio, enjoy using iN2L + LifeLoop for karaoke, trivia, audiobooks, music, and classic TV shows. "It's a great way to engage people either in group or one-on-one. We use it a lot. We take it to individual rooms for people who are not mobile. It just has so many activities that residents can do," LeBlanc said. "It provides mental stimulation, or it can be used just for fun. You can travel to different places and our residents really love that."

**To summarize—it's important to just get started.** You've likely seen the effect music has on residents within senior living communities. Music can have an astonishing impact on individuals no matter the types or stage of memory loss or neurological impairment they may exhibit. Music can rekindle lost memories and produce emotional reminiscences of other times and places.



## Additional resources for learning more about using music in dementia care

1. **Seek continuing education opportunities.** Dementia care program directors and activities staff will find multiple courses that help to expand their knowledge of music and dementia—one example is at the University of Cincinnati.<sup>22</sup>
2. **Search for music and dementia-focused sessions at events.** These can be found at regional or national conferences sponsored by LeadingAge, Aging in America, or Argentum, among others. One of the advantages of national events is the opportunity to participate in a session with multiple interested individuals like activities directors or executive directors, all hoping to use what they learned when they go back home.
3. **Subscribe to social media forums that discuss music and dementia.** Learn and stay up-to-date current trends and best practices by subscribing to music and dementia care-focused online forums and social media groups—like [@dementiadarling](#) on Instagram.
4. **Seek an online Q&A forum on social media sites for problems/solutions.** Many activities directors do not know what questions to ask, so seed the Q&A with examples such as, “When during the day are specific music selections appropriate? For which type of residents? What musical selections are proven to be effective?” These types of questions could also be posted on a Facebook Group such as the Dementia Caregiver’s Support Group.
5. **Read and share research with your co-workers.** Collect and share any research, articles, or case studies as you find them. Here are some to get you started:
  - A [University of Toronto 2021 study](#) about improvements to cognitive function.
  - [Project Vital](#), the 2021 Florida-based program. In addition, consider using the
  - [Clinical Benefits of Therapeutic Music](#), a Coro Health white paper.
  - [2017 article in Practical Neurology](#) examined multiple research sources on the relationship between music and dementia. Recent randomized controlled studies have shown the efficacy of music intervention in improving the well-being of individuals with dementia and their caregivers.

## Sources:

1. Machado Sotomayor, M. J., Arufe-Giráldez, V., Ruíz-Rico, G., & Navarro-Patón, R. (2021). Music Therapy and Parkinson's Disease: A Systematic Review from 2015–2020. *International journal of environmental research and public health*, 18(21), 11618. <https://doi.org/10.3390/ijerph182111618>
2. Musical Bridges to Memory. ita chicago. (2022, March 10). <https://itachicago.org/musical-bridges-to-memory/>
3. Scales, K., Zimmerman, S., & Miller, S. J. (2018). Evidence-Based Nonpharmacological Practices to Address Behavioral and Psychological Symptoms of Dementia. *The Gerontologist*, 58(suppl\_1), S88–S102. <https://doi.org/10.1093/geront/gnx167>
4. Hansen, J. (Director). (n.d.). Reducing the Use of Psychotropic Drugs and Improving Quality of Life through Entertaining Technology-Driven Activities. LeadingAge CAST. <https://in2l.com/resource/reducing-the-use-of-psychotropic-drugs-and-improving-quality-of-life-through-entertaining-technology-driven-activities/>
5. Thomas, K., Gebeloff, R., Silver-greenberg, J. (2021, September 11). Phony diagnoses hide high rates of drugging at nursing homes. *The New York Times*. <https://www.nytimes.com/2021/09/11/health/nursing-homes-schizophrenia-antipsychotics.html>
6. (2022, March 6). Music; memory reduces dementia medications and aggressive behavior. <https://health.ucdavis.edu/news/headlines/music--memory-reduces-dementia-medications-and-aggressive-behavior/2020/08>
7. Lasek, A. (2022, September 7). Lunchtime music therapy reduces agitation in nursing home trial. McKnight's Long-Term Care News. <https://www.mcknights.com/news/clinical-news/lunchtime-music-therapy-reduces-agitation-in-nursing-home-trial/>
8. Assistant Secretary for Planning and Evaluation. (2022, March 8). Antipsychotic medication prescribing in long-term care. <https://aspe.hhs.gov/sites/default/files/documents/c7cded0bf6f55567b55d78ef9e56687d/antipsychotic-medication-ltcf.pdf>
9. Holden, R., & Holden, J. (2013). Music: a better alternative than pain? *The British journal of general practice: the journal of the Royal College of General Practitioners*, 63(615), 536. <https://doi.org/10.3399/bjgp13x673748>
10. Machado Sotomayor, M. J., Arufe-Giráldez, V., Ruíz-Rico, G., & Navarro-Patón, R. (2021). Music Therapy and Parkinson's Disease: A Systematic Review from 2015–2020. *International journal of environmental research and public health*, 18(21), 11618. <https://doi.org/10.3390/ijerph182111618>
11. Davis, M. (2019, August 7). Dementia and the benefits of Music Enrichment. *Arc of Monroe*. <https://arcmonroe.org/dementia-music/>
12. Stegemöller, E. (n.d.). Parkinson's Disease Patients' Singing Improves Voice and Swallow Impairment. <https://www.todaysgeriaticmedicine.com/archive/JF18p18.shtml>
13. Beeman, K. (2021, May 25). The benefits of music therapy in Adult Day Programs: Messiah lifeways. *Messiah Lifeways Blog*. <https://messiahlifeways.org/blog/benefits-music-therapy-adult-day/>
14. Moreno-Morales, C., Calero, R., Moreno-Morales, P., Pintado, C. (1AD, January 1). Music therapy in the treatment of dementia: A systematic review and meta-analysis. *Frontiers*. <https://www.frontiersin.org/articles/10.3389/fmed.2020.00160/full>
15. Devere, R. (n.d.). Music and dementia: An overview. *Practical Neurology*. <https://practicalneurology.com/articles/2017-june/music-and-dementia-an-overview>
16. Batt-Rawden KB, Stedje K. Singing as a health-promoting activity in elderly care: a qualitative, longitudinal study in Norway. *Journal of Research in Nursing*. 2020;25(5):404–418. doi:10.1177/1744987120917430
17. Music and dementia: Mind music™ in Wellspring Village®. *Brightview Senior Living Communities*. (n.d.). <https://www.brightviewseniorliving.com/types-of-living/music-and-dementia>
18. The powerful impact of Music on Memory Care: Aegis Living. <https://www.aegisliving.com/resource-center/the-powerful-impact-of-music-on-memory-care/>
19. Team, S. (2022, May 29). Music strikes a chord in those with Alzheimer's Memory Care Communities. *Sonata Senior Living*. <https://sonataseniorliving.com/music-strikes-chord-those-with-alzheimers-memory-care-communities/>
20. Frequently Asked Questions & Best Practices. (2022). *Coro Health*. <https://corohealth.com/music-first/>
21. Bridges by EPOCH: Extending community impact by using technology-enabled memory care engagement in virtual events. *iN2L*. (2022, June 17). <https://in2l.com/resource/bridges-by-epoch-extending-community-impact/>
22. Connecting through music. (2022, May 24). *UC News*. <https://www.uc.edu/news/articles/2022/05/uc-course-brings-people-together-through-music.html>